

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
3 February 2005 (03.02.2005)

PCT

(10) International Publication Number  
**WO 2005/010065 A1**

- (51) International Patent Classification<sup>7</sup>: **C08F 265/04**, 265/06, C09D 151/00, 5/02, C08F 2/22, 285/00
- (74) Agents: CAINE, Michael, J. et al.; Davies Collison Cave, 1 Nicholson Street, Melbourne, Victoria 3000 (AU).
- (21) International Application Number:  
PCT/AU2004/000989
- (22) International Filing Date: 23 July 2004 (23.07.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
2003903838 23 July 2003 (23.07.2003) AU
- (71) Applicant (for all designated States except US): **ORICA AUSTRALIA PTY LTD** [AU/AU]; 1 Nicholson Street, Melbourne, Victoria 3000 (AU).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **CHALMERS, Amanda, Jane** [AU/AU]; 5 Centre Road, Vermont, Victoria 3133 (AU). **FARRUGIA, Jason, Michael** [AU/AU]; 40 Strezlecki Grove, Laverton South, Victoria 3028 (AU). **SALTER, Elizabeth, Ann** [AU/AU]; 102 Howitt Street, Ballarat North, Victoria 3350 (AU). **SUCH, Christopher, Henry** [GB/AU]; 50 Old Mornington Road, Mount Eliza, Victoria 3930 (AU). **MACKINNON, Olga, Maree** [AU/AU]; 7 St James Court, Blackburn South, Victoria 3130 (AU).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: AQUEOUS POLYMER DISPERSION

(57) Abstract: The invention provides a process for preparing an aqueous dispersion of water insoluble heteropolymeric particles comprising polymerising in an aqueous reaction medium ethylenically unsaturated monomers, said ethylenically unsaturated monomers comprising ionisable ethylenically unsaturated monomers and non-ionisable hydrophilic ethylenically unsaturated monomers, to form said heteropolymeric particles dispersed in said aqueous reaction medium, wherein the monomers in said reaction medium at any point in time comprise less than 5 weight % of ionisable ethylenically unsaturated monomer, wherein for at least a part of the polymerisation the monomers in said reaction medium have a composition which is maintained with an ionisable ethylenically unsaturated monomer content of from 0.5 to less than 5 weight % throughout polymerisation of at least 30 weight % of the total amount of monomers polymerised to form the heteropolymeric particles, and wherein the total amount of non-ionisable hydrophilic ethylenically unsaturated monomers and ionisable ethylenically unsaturated monomers polymerised constitutes at least 75 weight % of the total amount of monomers polymerised to form the heteropolymeric particles, a method of preparing a paint comprising conventional paint additives and the aqueous dispersion of water insoluble heteropolymeric particles of the invention, and a novel aqueous dispersion of water insoluble heteropolymeric particles.



WO 2005/010065 A1